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Emerging disease in Africa

R. Colebunders

University of Antwerp, Antwerp, Belgium

Nodding syndrome (NS) is an unexplained neurological illness that so far has been reported in onchocerciasis endemic areas in South Sudan, northern Uganda and Tanzania (Mahenge). NS mainly occurs in children between 5 and 15 years of age. The syndrome starts with involuntary nodding of the head in a previously healthy child. As the disease progresses different types of epileptic seizures occur, in some children accompanied by gradual cognitive deterioration. Some children present with stunted growth without secondary sexual characteristics.

Although the aetiology of NS is unknown, case control studies suggested an association between NS and onchocerciasis. However, PCR tests in cerebrospinal fluids of NS patients failed to identify the parasite's DNA. We hypothesise that NS is caused by an unknown neurotropic virus transmitted by the blackfly.

In certain villages in the West Equatorial state in South Sudan one in 6 children has NS and more than 50% of families have at least one child with NS. The prevalence of NS in these villages is about 8% and new cases are still seen every month. In northern Uganda the prevalence of NS is around 0.8%. In 2012 insecticides and larvicides were used targeting the rivers where blackflies were breeding. As a consequence, since 2013 no new cases of NS were reported. In the past NS outbreaks appeared when populations moved into an uninhabited forest and epidemics disappeared after the use of aerial spraying or larviciding.

The "NS virus" may cause the classical NS symptoms but also epilepsy and is probably responsible for the high prevalence of epilepsy, also in other onchocerciasis endemic areas e.g. in Cameroun and the DRC

Insecticide spraying and use of larvicides, but not the use of ivermectin, seems to be associated with a decrease of in the number of new NS cases. If confirmed, our hypothesis will enable new strategies to control NS outbreaks.

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The geography of infectious diseases in Africa: From endemic populations to travelers

M. Mendelson

University of Cape Town, Cape Town, South Africa

The geography of infectious diseases in Africa is largely dictated by vector distribution, daily activities that result in risk exposures, such as immersion in inland waterways, sexual exposures or activities at the animal-human interface, and migration of pathogens with their human hosts particularly during times of political conflict. Malaria, HIV and tuberculosis dominate much of Africa's endemic burden of disease. However, as international attention continues to focus on these epidemics, it also persists in side lining important neglected tropical diseases and has failed to appreciate developing epidemics on the continent, such as bacterial antibiotic resistance.

The common misconception that travel to Africa presents a homogenous risk in terms of acquisition of infections, prevents an accurate, focused pre-travel consultation from taking place, and under-appreciates the true differential diagnosis of fever in returning travelers from different parts of the continent. Our recent analysis of illnesses in travelers returning from Africa, who attended one of the 54 international GeoSentinel Travel Surveillance Network clinics over the past 14 years, has shown marked regional variation in infections acquired in Africa. This paper will elucidate the major divide between the types of illness acquired in Northern and sub-Saharan Africa, as well as major differences in the proportion of travelers who acquire different febrile illnesses such as malaria, rickettsioses, schistosomiasis and dengue, depending on the region to which they have traveled.

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Why are people still dying of HIV in Africa?

G. Meintjes

University of Cape Town, Cape Town, South Africa

The World Health Organisation (WHO) estimates that in 2012 there were 25.0 million people living with HIV infection in sub-Saharan Africa. Antiretroviral therapy (ART) provision has been dramatically scaled-up in countries across Africa over the last 10 years through government and donor initiatives: it is estimated that 7.0 million adults in sub-Saharan Africa had started ART by the end of 2012, representing 68% of those eligible by 2010 WHO criteria. However, HIV-related mortality in Africa remains